



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

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480672

Tire Fires

Difficult to Extinguish, Expensive to Clean Up

How to Protect Yourself

Tire fires often become major emergency incidents affecting entire communities—frequently requiring neighborhood evacuations and long, drawn-out fire extinguishing operations. These fires often cause significant pollution of the air, soil and water. U.S. EPA, states, municipalities, and private companies have spent millions of dollars cleaning up after tire fires across the country.

Tire Fire Contaminants and Potential Health Effects

When a tire fire occurs, tires break down into compounds hazardous to human health including caustic gases, heavy metals and various hydrocarbons associated with the oil and other chemical feedstock used to produce the tires. Air emissions from open burning of tires is dependent on many factors but may include particulates, chemical irritants (such as sulfur dioxide, xylenes, aldehydes, toluene and styrene), and carcinogenic chemicals (primarily polycyclic aromatic hydrocarbons but also benzene and 1,3-butadiene).

The air emissions from open tire fires can pose significant short-term and long-term health effects to anyone exposed (e.g. firefighters and downwind residents). The amount of the specific contaminant, the duration and route of exposure (inhalation, ingestion or skin contact) and the health status of exposed individuals are important factors in determining the potential for adverse health effects.

Health effects associated with exposures may include reversible, short-term effects such as irritation of the skin, eyes, and mucous membranes, temporary respiratory effects and central nervous system depression. Risk assessors do not expect short-term exposures to air emissions from tire fires to result in an increased risk of cancer. For more information, including research on air pollutants generated by tire fires and their health risks, please go to: <http://www.calepa.ca.gov/Publications/Reports/Mandated/2002/Enforcement.pdf>

Protect Yourself: Avoid Smoke and Ash

Evacuations are typically advised for neighborhoods downwind of tire fires in order to prevent or reduce potential exposure to airborne chemicals during severe fires which take more than a few hours, and may take several days or longer, to extinguish. If you remain in your home, or when you return to your home after an evacuation, keep windows and doors closed and replace HVAC system filters often to reduce exposure to ash and dust that may enter the home. General good housekeeping practices, as discussed below, are useful in cleaning up any ash and dust in the home.

Soil and Surface Water Pollution

The average passenger car tire is estimated to contain approximately two gallons of oil similar to heating oil (Source: California EPA, Tire Fire Smoke – Report to Legislature, May 2002). Consequently, for very large tire fires, thousands of gallons of oily material may be released into the environment unless contained and collected. These oily materials released onto the ground and into surface water are also highly flammable. Cleanup efforts are often centered on removing this material and contaminated fire-fighting water from the environment so pollution does not spread.

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In addition to debris and oily material remaining at the fire site and contaminated water runoff, debris, ash and oily components of smoke from the fire may land far downwind from the fire scene. Environmental sampling of soils and surface water in this area of deposition may not be possible or may occur several days or weeks after the incident.

Protect Yourself: Consult Emergency Responders, Use Caution When Cleaning

If your property is downwind of an extinguished tire fire you may wish to protect yourself, family and pets from potential exposure to contaminants from fire residuals. **If your property is visibly contaminated with wind-blown fire debris, do not attempt cleanup yourself and keep children and pets away from these areas. Do not mow grass containing fire debris. Please consult the incident emergency responders for information and assistance concerning cleanup of these areas.**

If your property is not severely contaminated, you may wish to clean your outdoor living space, including outdoor furniture and hard surfaces with which people or pets come into contact. Use biodegradable detergent solutions and protect your skin from exposure to the detergents as well as soiled surfaces as you clean. Deeply water your lawn and rinse the leaves of plants that children or pets are likely to contact; this washes many contaminants off the surface of leaves and down into the soil where people and pets are less likely to be exposed and where many contaminants can be degraded by soil bacteria.

Tire Fires -- Frequently Asked Questions (FAQs)

Has my health been affected by exposure to the smoke?

Smoke from tire fires may contain high levels of particulates and chemicals that can be very irritating, particularly to those individuals who may have pre-existing cardiovascular or respiratory conditions. See your doctor if you are experiencing respiratory problems or other symptoms that have persisted since the fire.

How should I clean up tire fire ash tracked inside my home?

Ash and dust tracked into the home can be wiped up with wet paper towels; homeowners may wish to have family members leave shoes at the door in order to limit the amount of dust and ash tracked into the home until outside surfaces are rinsed off. **If your property is severely contaminated do not attempt cleanup yourself; keep people and pets away from the area and consult emergency responders about next steps.**

Is it safe to eat the produce from vegetable gardens downwind from a tire fire?

Garden produce should be washed once harvested; simple washing should provide sufficient protection. However, if a garden is downhill from the fire site and becomes saturated with water runoff from the fire, it would be prudent to have the soil analyzed for contaminants.

Is it safe to leave my dog outside now that the tire fire smoke has cleared and I've hosed off the grass?

Yes, however, if you note unusual behavior such as excessive scratching, your pet may be particularly sensitive to some chemical that remains in its environment.

Is there any immediate risk to my private well from a nearby tire fire?

The time required for surface water to infiltrate down through soils, become groundwater and enter a well is usually long enough to not be of immediate concern in the aftermath of a tire fire. However, if your private well is particularly shallow, in a low spot that received runoff water from a tire fire, or has a history of periodic contamination suspected to be from surface sources, your well could be at immediate risk and you should have your well water analyzed for volatile and semi-volatile organic contaminants.

For More Information, Please Contact:

Vermilion County Health Department, Douglas Toole (217-431-2662 ext. 243)

Illinois Department of Public Health, Environmental Health, Toxicology Section (217-782-5830)

Illinois EPA, Office of Community Relations, Mara McGinnis (217-524-3288), or Jay Timm (217-557-4972)